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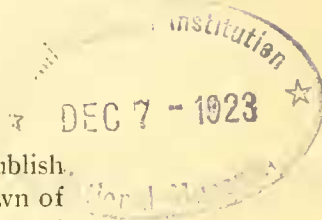
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XVIII
**EXPEDITION OF THE CALIFORNIA ACADEMY
OF SCIENCES TO THE GULF OF
CALIFORNIA IN 1921**

ON CHILOPODS AND DIPLOPODS FROM ISLANDS
IN THE GULF OF CALIFORNIA¹

BY
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It is a matter of considerable interest to be able to publish the following list since, heretofore, nothing has been known of the myriopod fauna of islands of the Gulf of California, and only a few isolated records have been made for Lower California proper. The present paper records a total of 16 species, nine chilopods and seven diplopods, collected by the Expedition of the California Academy of Sciences from April to July, 1921. Of these, 12 species were taken on the islands only, three species at neighboring places on the peninsula or mainland, and one, the abundant *Scolopendra polymorpha*, on both islands and mainland at nearly every station where myriopods were collected. Unless otherwise stated under the species concerned, all specimens were collected by Joseph C. Chamberlin, and references to field notes are to those of his journal.

Most of the forms represented in this collection, of which the majority are new, form an obvious continuation of the Sonoran fauna as known in Arizona and southern California;

¹A map showing all the islands, etc., visited by this Expedition will be found in Vol. XII, No. 6, of these Proceedings, copies of which can be supplied at nominal cost.

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but a few are of distinctly tropical genera. Among the chilopods, two species belong to the tropical genus *Pectiniunguis*, the genotype of which was also described from the cape region of Lower California. One species of diplopod taken at San Pedro Bay, Sonora, is of the tropical genus *Siphonophora*, while two species belong to the similarly tropical genus *Orthoporus*, one of these also coming from the coastal strip of Sonora, and one from Tiburon Island. The new cryptodesmid genus *Xerodesmus*, the type of which was taken at Mulegé on the peninsula, also apparently has its nearest affinities with tropical forms.

CHILOPODA

SCOLOPENDRIDÆ

1. *Scolopendra polymoryha* Wood

Proc. Acad. Nat. Sci. Phila., 1861, p. 11

Localities. Arizona: Nogales, one specimen, April 4, E. P. Van Duzee; Sonora: Guaymas, two specimens, E. P. Van Duzee, Apr. 7, and J. C. Chamberlin, Apr. 14; Tepoca Bay, two specimens, Apr. 25. Lower California: Ensenada de Todos Santos, three young, Apr. 7; Puerto Escondido, one specimen, June 4; San Pedro Nolasco Island, one specimen, E. P. Van Duzee, Apr. 17; San Esteban Island, two specimens, Apr. 20; Georges Island, four specimens, Apr. 26; Angela de la Guardia Island, one specimen, May 3, Sal si Puedes Island, one specimen, May 9; San Lorenzo Island, one specimen, May 9; Tortuga Island, two specimens, May 11; Santa Inez Island, two specimens, May 13; Ildefonso Island, one specimen, May 17; Coronados Island, one very young, May 18; Carmen Island, Puerto Ballandra, one specimen, May 21; Monserrate Island, three specimens taken by Virgil Owen and J. C. Chamberlin, May 25; Espiritu Santo Island; Isla Partida, two specimens, May 30 and June 25; El Candeleros Bay, one specimen, June 8; Ballena Island, three specimens, June 9; Tiburon Island, one specimen, July 5.

SCHENDYLIDÆ

Genus PECTINIUNGUIS Bollman

Proc. U. S. Nat. Mus. 1889, XII, p. 212

Adenoschendyla Brölemann & Ribaut, Bull. Soc. Ent. France, 1911, p. 192; and Nouv. Arch. Mus. Hist. Nat., 1912, ser. 5, 4, p. 104.

Non *Pectiniunguis* Brölemann & Ribaut, Nouv. Arch. Mus. Hist. Nat. ser. 5, 4, p. 98.

In assuming that *Pectiniunguis americanus* Bollman, type of the genus, agrees with *P. insulanus* Brölemann and Ribaut in having a labrum lacking truly differentiated teeth on the median arc, Brölemann and Ribaut (loc. cit. supra) have apparently fallen into error. Well developed teeth are present. In consequence their diagnoses of *Pectiniunguis* and *Adenoschendyla* must be interchanged. This makes *Adenoschendyla* a synonym of the former name and leaves the group typified by *insulanus* without designation. It may be known as **Litoschendyla**, nom. nov. *P. americanus* Bollman was described from a male taken at Pichilingue Bay, the specimen being subsequently dissected and redescribed by Cook (Proc. U. S. Nat. Mus. 1890, p. 388). Two new species closely related to the genotype and taken on islands of the Gulf of California are listed below. Other species of the genus are known from the West Indies, South America, the Galapagos Islands and the Fiji Islands.

2. *Pectiniunguis nesiotus* Chamberlin, new species

General form of head and prehensors as in *P. americanus* with the prebasal plate similarly exposed. Prelabral region distinctly separated from pleural region on each side by a clear band; twice as wide as long or nearly so; reticulation distinct throughout, the reticulation finer in a median longitudinal band which expands on each side in front of the middle; a pair of postantennal setæ as usual, a second pair closer together in front of the middle and ectad of each of these a transverse series of five or six setæ. Teeth of median arc of labrum strongly chitinized, stout, 14 in number in the type. Teeth or pectinations on each side of these also stout, becoming more slender in going ectad, nine or 10 in number, (Cf. fig. 1). Dentate lamella of each mandible divided into four parts, toothed as follows: 3, 5, 2, 1. Dorsum deeply bisulcate, smooth. In the eupleurium the posterior sclerite of the fourth series (4y) is present as are also the anterior ones

of series four and five (4x and 5x). Ventral pore not present on first and penult plates. Pairs of legs fifty-nine in both male and female types. Length, 46 mm.

Type: Male, No. 1247, and *allotype*, female, No. 1248, Mus. Calif. Acad. Sci., collected April 20, 1921 by Jos. C. Chamberlin on **San Esteban Island, Gulf of California.**

This species is different from others thus far known in the formula of teeth of mandible. It differs from *americanus* in this formula as well as in lacking pores on the penult sternite, the dentition of labrum, and in the presence of pleurite 4 y. In neither the types of this nor the following species is there a geminate dark dorsal stripe.

3. *Pectiniunguis amphibius* Chamberlin, new species

General form of head and prehensors also as in *americanus*. The prebasal plate usually exposed, but sometimes covered, the cephalic plate shifting over the anterior border of the basal plate. Prelabral region set off distinctly from the pleural regions; depressed transversely in front of the labrum, the latter protruding prominently in the types, with its median edge directed ventrad.* Median arc of labrum deep, characteristically straight at bottom. In the male examined the teeth on this straight median part of edge are eight in number, but in a female dissected there are only four. These four teeth, however, are broad and obviously double, as though formed by the nearly complete fusion of the teeth in pairs. See further fig. 2. Dentate lamella of mandible in three divisions: the teeth thus, 3, 3, 3. Dorsum and pleurites as in *ncsiotes*. Ventral pores present on all plates from first to penult inclusive, the pores 20 or more in number on the latter. Number of pairs of legs in the male 61; in the female usually 63; occasionally 61 as in the male. Length to about 65 mm.

Localities. Danzante Island, nine females and three males. Carmen Island, two females.

Type: Male, No. 1249, and *allotype*, female, No. 1250, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, May 25, 1921 on **Danzante Island, Gulf of California.**

This species seems very close to *P. americanus*, but, according to Cook's figures of the latter, differs in the presence of pleurite 4 y. The pores of the penult sternite are notably more numerous, and the teeth of the dentate lamella of mandible are 3, 3, 3, instead of 3, 3, 2. It differs from *ncsiotes* in the

* In *P. albemarlensis* Chamb., and, at least sometimes, in *P. gaigei* Chamb., the labral region bulges somewhat similarly but the edge of the labrum at middle is not turned ventrad in any specimens observed. In these species the median arc is deeply angular. (Cf. figs. 3 and 4.)

presence of ventral pores on first and penult sternites, in the divisions of the dental plate of the mandibles, etc.

The field note records that this species was taken below the high-tide mark. Its habits would thus seem to be similar to those of the related *Hydroschendyla submarina* (Grube) of the coasts of England, France and Bermuda Islands.*

Genus NYCTUNGUIS Chamberlin

Bull. Mus. Comp. Zool., 1914, LVIII, p. 201

A genus previously known from several forms occurring in California. The species of this genus are readily distinguished from those of *Schendylurus* and *Pectiniunguis* in the possession of normally developed claws on the anal legs, and from the latter in having the coxal glands simple or homogeneous.

4. *Nyctunguis mirus* Chamberlin, new species

The general form of the head is shown in fig. 5. The type, as shown by this figure, is interesting in having the one antenna present composed of only nine articles, all of which are long, probably being regenerated. Prebasal plate not exposed in the type. Basal plate about 3.7 times wider than long. Prehensors when closed not attaining anterior margin of head; inner edge of femuroid short; all articles unarmed as usual. Prosternum 1.6 times wider than long. (Cf. fig. 6). Labrum with median arc not deep, its teeth 16 in number, of which all but the more lateral ones are distally blunt. Four or five teeth or pectinations of the usual character on each side (fig. 8). Dentate lamella of mandible quadripartite, the teeth 3, 3, 5, 1 (fig. 7). Ventral pores in a large area which is usually transversely elliptic or quadrate with two angles on median line, the area somewhat concavely depressed. Last ventral plate broad and trapeziform, sides straight or nearly so, caudal corners not rounded (fig. 10). Coxal pores covered by plate, or the posterior one but slightly exposed. Last legs in the female slender, the claw normal. Pairs of legs, female type, fifty-nine. Length, about 38 mm.

A small male taken at the same locality and time is also referred to this species because of the close agreement in structure of the dentate lamella of mandible. The head differs in form, as shown in fig. 11. The antennæ have the normal fourteen articles. The labrum is more deeply arched and the

*Cf. R. V. Chamberlin, The Myriopod Fauna of the Bermuda Islands, Ann. Ent. Soc. America, 1920, XIII, p. 278.

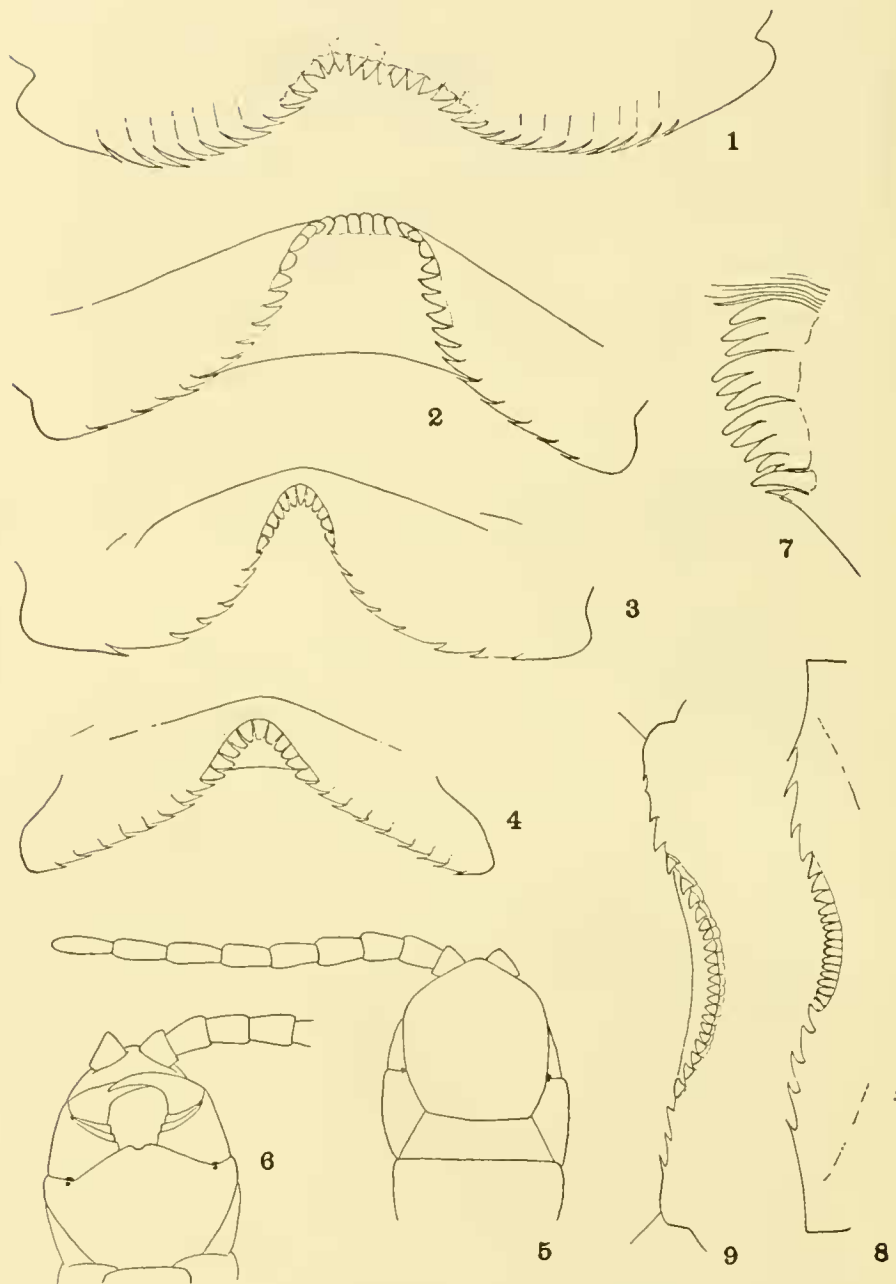


Fig. 1. Labrum of *Pectiniunguis nesiotes*, sp. nov., x 182; 2. Labrum of *Pectiniunguis amphibius*, sp. nov., x 182; 3. Labrum of *Pectiniunguis albemarlensis* Chamberlin, type, x 182; 4. Labrum of *Pectiniunguis gaigei* (Chamberlin), x 175; 5. Anterior end of body of *Nyctunguis mirus*, sp. nov., dorsal view, type, x 20; 6. The same, ventral view, x 20; 7. Dentate lamella of mandible of same, type, x 375; 8. Labrum of same, type, x 182; 9. Labrum of *Nyctunguis libercolens*, sp. nov., x 480.

median teeth are directed ventrad; they are twelve in number instead of sixteen, and are conically pointed. The femuroid of prehensors with inner side longer and the prosternum proportionately also longer. The last ventral plate is proportionately longer. Anal legs with joints clothed beneath with numerous fine, short hairs, as in the males of other species of the genus, and the claw small but distinct.

Type: Female, No. 1251, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, April 7, 1921, at **Ensenada de Todos Santos, Lower California.**

5. *Nyctunguis danzantinus* Chamberlin, new species

Cephalic plate only slightly longer than wide (15:14); anterior margin broad, only weakly convex, the caudal margin straight; broadest a little in front of middle. Prebasal plate exposed. Claws of prehensors when closed reaching nearly to end of first antennal article. Prosternum and joints of prehensors all unarmed. Labrum separated only at ends as usual. Deeply excavated at middle, the median arc 10 teeth, of which six or seven are directed ventrad, on each side four teeth, the ectal portion of edge smooth (fig. 13). Teeth of dentate lamella of mandible 3, 3, 3 (fig. 14). Dorsum deeply bisulcate, otherwise smooth. Coxal pits two on each side and homogeneous as usual, partly covered by last ventral plate. Last ventral plate broad, trapeziform. Anal legs in female long, not crassate, the claw normally developed. Pairs of legs, 55. Length, about 27 mm.

Type: Female, No. 1252, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, May 24, 1921, at **Danzante Island, Gulf of California.**

6. *Nyctunguis libercolens* Chamberlin, new species

Body conspicuously attenuated from middle toward both ends. Yellow in color, with the head and often also the anal legs orange. A geminate, dark, dorsal stripe, lengthwise of body, sometimes also present. The general shape and proportions of the head as shown in fig. 12. Prebasal plate normally exposed, but sometimes covered. Claws of prehensors when closed attaining or sometimes a very little surpassing the anterior margin of head. Median arc of labrum wide, only moderately curved, and bearing from 14 to 20 teeth, with pectinations on each side as usual (fig. 9). Dentate lamella of mandible tripartite, the teeth 3, 3, 4. Ventral pores on anterior plates in the usual subcircular areas. Last ventral plate broad and trapeziform. Coxal pores as usual. Anal legs in female slender; in the male moderately swollen, the tarsal joints, especially the second one, more slender, the joints clothed below as usual. Pairs of legs 47 or 49 in all specimens examined, the males normally having the lesser number. Length, to 30 mm.

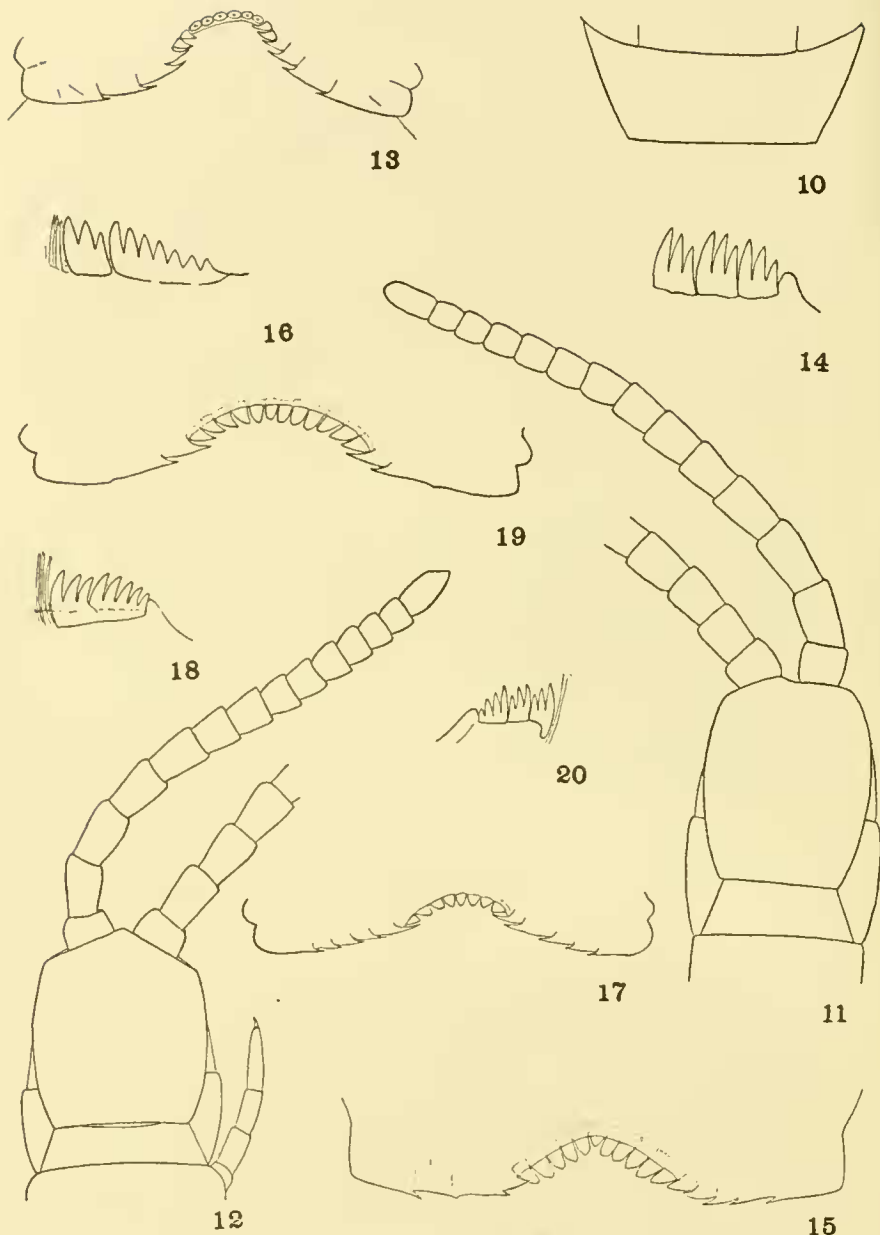


Fig. 10. Last ventral plate of *Nyctunguis mirus*, sp. nov., type, x 75; 11. Same, dorsal view of anterior end of a young male, x 46; 12. Anterior end, dorsal view, of *Nyctunguis libercolens*, sp. nov., x 49; 13. Labrum of *Nyctunguis dansantinus*, sp. nov., x 235; 14. Dentate lamella of mandible of same, x 375; 15. Labrum of *Nyctunguis monterei* (Chamberlin), paratype, Pacific Grove, x 240; 16. Dentate lamella of same, paratype, Pacific Grove, x 375; 17. Labrum of *Nyctunguis heathi* (Chamberlin), type, x 230; 18. Dentate lamella of mandible of same, type, x 375; 19. Labrum of *Nyctunguis catalinae* (Chamberlin), type, Catalina Id., x 375; 20. Dentate lamella of mandible of same, type, x 375.

Localities. California: Stanford and environs, numerous specimens taken under the bark of Eucalyptus trees in Dec., 1920; Los Angeles, author's collection, 1909, etc.

NESONYX Chamberlin, new genus

Like *Nyctunguis* in having the anal legs armed with normal claws, but differing in wholly lacking coxal glands. Labrum well developed, discrete excepting at middle where continuous with prelabral region. Median arc dentate, the teeth distinct, typically slender, with lateral teeth or pectinations more finely tipped as in related genera. Claws of second maxillæ pectinate along both margins; internal angle of pleurite not prolonged forward. Genotype. *N. flagellans* Chamberlin, new species.

7. *Nesonyx flagellans* Chamberlin, new species

Head but little longer than wide (cir. 15:14); sides convex, widest in front of middle; caudal margin wide, straight. Antennæ filiform; the ultimate article longer than the two preceding ones taken together, the sensory cone areas or depressions proximad of distal end. Prebasal plate not exposed (Cf. fig. 21). Teeth of median region of labrum long and slenderly conical, becoming more acute in passing ectad on each side. Total number of teeth about 24, of which 15 pertain to the median arc, all teeth rather pale in the type (Cf. fig. 22). Dentate lamella of mandible tripartite, the teeth 3, 3, 3 (2), long, pale. Inner branch of first maxilla comparatively small, conical, not set off by suture; outer branch stout, lappets long and slender, lying more or less in dorsal position. Prehensors with claws, when closed, much exceeded by chepalic plate; rather weak, the claws slender; all joints unarmed. Prosternum without chitinous lines. Basal plate as shown in fig. 21. Ventral pores on anterior sternites; on each of these, where present, in a small, depressed, circular area, few in number. Dorsal plates deeply bisulcate. Last ventral plate very wide, its sides strongly converging caudad; a band of short, fine hairs across its caudal border. Anal legs of male moderately thickened, ending in normal claws, the ventral surface densely clothed with fine, short hairs; those of the female more slender, the short hairs beneath restricted to proximal joints. Number of pairs of legs, in both male and female types, fifty-five. Length, about 26 mm.

Georges Island, one male and one female taken under stones, Apr. 20.

The field note states that these animals when disturbed thresh about, this habit suggesting that of species of *Balophilus*.

Type: Male, No. 1253, *allotype*, female, No. 1254, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, April 20, 1921, on **Georges Island, Gulf of California**.

HIMANTARIDÆ

Gosothrix Chamberlin, new genus

No suprascutella above the spiraculiferous pleurites. Dorsal plates not sulcate. Ventral plates without pores or special impressions. Chitinous lines present in prosternum, complete. Last ventral plate moderate, quadrate. Coxal pores few; opening at edge of last ventral plate, typically in a common slit or furrow.

Genotype, *G. insulanus* Chamberlin, new species.

Differs from *Gosiphilus*, represented by several species in California, in the absence of ventral pores and the presence of claws on the anal legs. Distinguished from *Notobius* in the absence of ventral pores and of suprascutella.

8. *Gosothrix insulanus* Chamberlin, new species

Antennæ flattened and contiguous at base, attenuated distad, the ultimate article with sensory pits proximad of distal end. Head small, narrowed forward from behind the middle, the anterior and posterior margins truncate. Basal plate across its caudal border wider than the head, long. Prebasal plate exposed (Cf. fig. 23). Prehensors small, the claws when closed equalling or slightly surpassing the anterior margin of head. The prosternum unusually long, the chitinous lines strongly developed and complete (Cf. fig. 24). Dorsal plate not sulcate, smooth, or very finely longitudinally striate and of a consequent somewhat silky luster. No ventral pores detected. Coxal glands five or six on each side, of which only two are exposed at edge of last sternite, the others being covered and partly crowded against penult pediferous segment and becoming obvious only after clearing and mounting of specimen, the glands apparently opening into a channel along edge of last ventral plate. Last sternite quadrate, the sides being essentially parallel and the caudal margin straight. Anal legs with slender claws. Number of pairs of legs in the type, a female, one hundred and fifty-nine. Length, about 86 mm.

Type: Female, No. 1255, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, July 1, 1921 at **Pond Island, Gulf of California**.

GOSIBIIDÆ

9. *Gosibius paucidens* (Wood)

Lithobius paucidens Wood, Jour. Acad. Nat. Sci. Phila., 1862, n. s. V, p. 14.

Gosibius paucidens Chamberlin, Can. Ent., 1912, 43, p. 204; Bull. Mus. Comp. Zool., 1917, LVII, p. 210, pl. 1, fig. 1-4.

Lower California: Ensenada de Todos Santos, three males, Apr. 7. A common species in southern California.

SCUTIGERIDÆ

10. *Scutigera coleoptrata* (Linnæus)

Scolopendra coleoptrata Linnæus, Syst. Nat. ed. 10, I, p. 537, 1758.

Scutigera coleoptrata Lamarck, Syst. Anim. s. vert., 1801, p. 182.

Scutigera coleoptrata Latzel, Myriop. Ost.-Ung. Mon., 1, 1880, p. 24, pl. 1, figs. 1-7, which see for full early European bibliography.

Scelista forceps Rafinesque, Ann. Nat., 1820, p. 7.

Cermatia coleoptrata Say, Jour. Acad. Sci. Phila., 1921, II, p. 5.

Cermatia coleoptrata var. *floridensis* Newport, Ann. and Mag. Nat. Hist., 1844, XIII, p. 95.

Cermatia floridana Newport, Trans. Linn. Soc., London, 1845, 19, p. 353.

Cermatia forceps, Wood, Trans. Amer. Phil. Soc., 1865, XIII, p. 145, pl. 3, figs. 1, 1a.

Scutigera coleoptrata Chamberlin, Ann. Ent. Soc. Amer., 1920, XIII, p. 283.

Localities. Raza Island, a very young taken Apr. 21; Georges Island, one partly grown, Apr. 26; Espiritu Santo Island, a very young taken May 31; San Pedro Bay, Sonora, one specimen, July 7.

DIPLOPODA

POLYXENIDÆ

11. *Polyxenus pœcilus* Chamberlin, new species

When in full color appearing dark from the presence of a longitudinal brownish band on each side of the clear yellow middorsal region, each band enclosing a yellow spot on each segment, this spot commonly breaking through the lateral edge. Head, viewed from above, with a narrow border of the same brownish color and a narrow stripe of same running from each eye obliquely to middle of anterior margin. Antennæ brownish over yellow. Legs also with brownish markings, especially at ends of joints. Caudal pencils in life white, according to the field note. Proportions of antennal articles as shown in fig. 25. The setæ of the head in general of the form shown in fig. 28. Some of the marginal setæ much smaller, as shown in outline in figs. 26 and 27. The setæ of the anterior lateral fascicles similar in form and structure to those of head, but in the more posterior fascicles they become more slender, with teeth finer. Setæ of the anal pencil of two main types. The first and more abundant form is long and very slender and flexible; distally clavately expanded or narrowly spatulate, with the usual fine teeth over surface and margins (fig. 29). Setæ of the second type, which are peripheral in position, much shorter, not stouter than setæ of last lateral fascicles which they resemble in structure, the terminal lobe commonly bent, somewhat spoon-like. Length 3 mm.

South Santa Inez Island, two specimens taken May 13, 1921; Carmen Island, Puerto Ballandra, a dozen specimens taken May 21; these, which are all badly rubbed, found under stones; Monserrate Island, two specimens taken May 24 "under bark of Yucca which grew closest to beach."

The field note with the specimens from Carmen Island states that "the white, waxy, caudal appendage spread fan-wise when disturbed."

Type: Male, No. 1256, and *allotype*, female, No. 1257, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, May 13, 1921, on South Santa Inez Island, Gulf of California.

SIPHONOPHORIDÆ

12. *Siphonophora pseustes* Chamberlin, new species

Dorsum light ferruginous; the venter paler, more yellowish. Rostrum slender, shorter than the head, surpassing the distal end of the fifth article of antennæ. Antennæ moderately clavately widening to fourth article; the fifth and sixth articles of equal and uniform width (fig. 30). Anterior margin of collum nearly straight. Collum about equal in length to the two succeeding tergites combined (Cf. fig. 30). Body com-

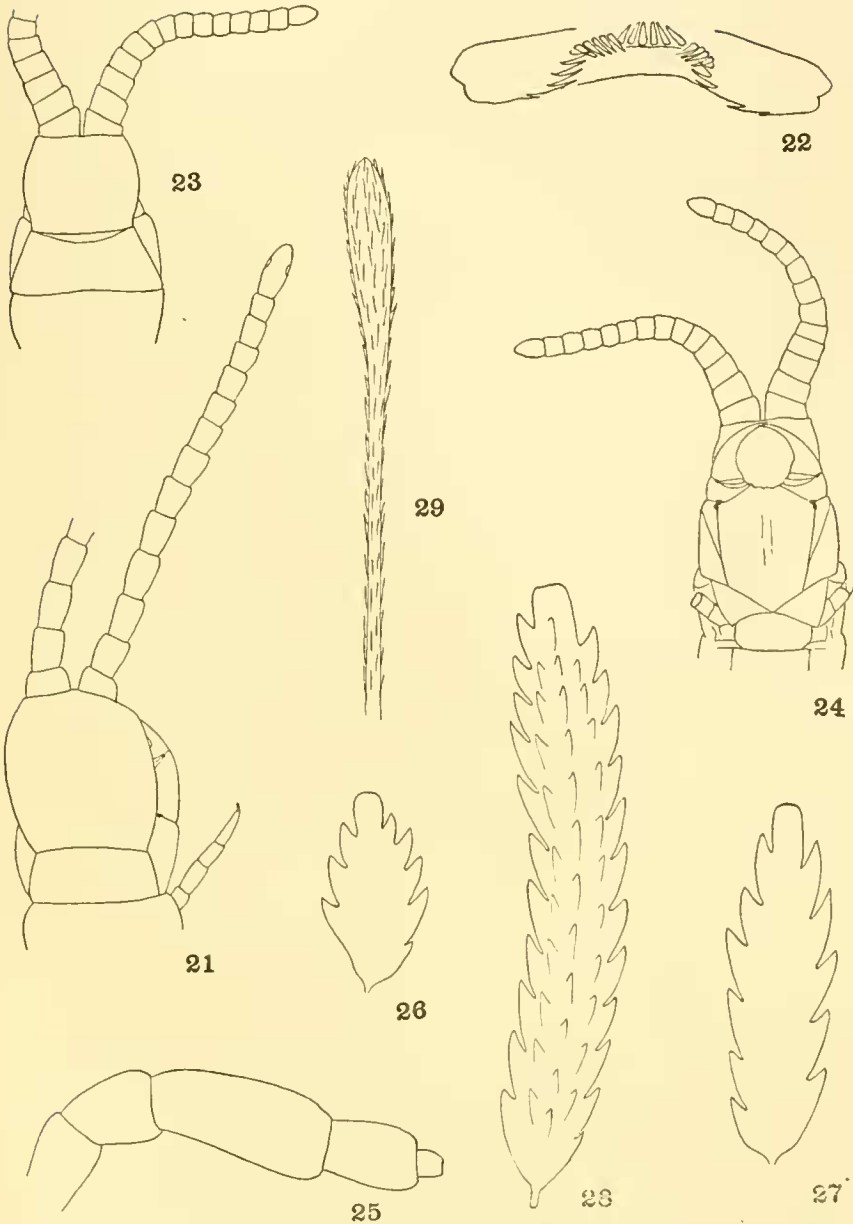


Fig. 21. Anterior end, dorsal view, of *Nesonyx flagellans*, sp. nov., x 46; 22. Labrum of same, x 240; 23. Anterior end, dorsal view, of *Gosothrix insulanus*, sp. nov., x 31; 24. The same, ventral view, x 31; 25. Distal portion of antenna, in outline, of *Polyxenus pæcilus*, sp. nov., x 180; 26, 27. Setae from margin of head of same, in outline, x 930; 28. Longer seta from head of same, x 930; 29. Distal portion of a major seta of caudal pencil of same, x 365.

paratively wide, moderately narrowed forward over anterior end and backward over posterior end, depressed. Anterior and posterior pleurites as shown in figs. 31 and 32. Anterior gonopods of male as shown in fig. 33. Number of segments in male type, one hundred and twenty-four. Length, 28 mm.; width, 1.2 mm.

In size and the large number of segments resembling *S. mexicanus* Humbert & Saussure, but differing conspicuously in the much more globular head and in the shorter rostrum.

Type: Male, No. 1258, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, July 7, 1921, at San Pedro Bay, Sonora, Mexico.

LYSIOPETALIDÆ

13. *Lysioptalum tiburonum* Chamberlin, new species

Body narrowing conspicuously at ends, elongate, fusiform; the dorsum depressed. Dorsum and sides fuscous or nearly black, without any distinct longitudinal pale lines or stripes such as are present in *L. lactarius* (Say) or *L. mutans* Chamberlin; the venter paler. Legs pale brown. Antennæ more fuscous, the ultimate article paler. Length of antennæ about equalling greatest width of body. Eyes subtriangular; ocelli in eight longitudinal series, about forty-nine in number, arranged thus: 6, 8, 9, 8, 6, 5, 4, 3. First tergite with anterior half smooth; the caudal half crossed by a series of 10, well-developed, longitudinal keels; just in front of the keels a transverse series of setæ and on each side a single seta between the two most lateral keels. On the next three tergites the setæ stand between the anterior ends of the keels; on subsequent ones they are in the usual posterior position. The repugnatorial pores large, opening through elevated and moderately thickened keels. Between the porigerous keels on each segment are six lower keels that extend to the caudal margin and on each side usually three intermediate ones that are lower and extend only part way to the margin, the outermost of these being the best developed. Below the porigerous keel, on each side, higher and lower keels similarly alternate, these fading out ventrad as usual.

In the male, the processes from coxæ of third legs somewhat clavately widened from base and distally obliquely truncate. Coxæ of succeeding legs back to and including those of the thirteenth segment with white colored, somewhat fungiform, appendages. Gonopods of the male as shown in figs. 34 and 35. Number of segments, sixty-two. Length, about 28 mm.; width, 2 mm.

Type: Male, No. 1259, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, July 5, 1921, at Indian village on south end of Tiburon Island, Gulf of California.

CRYPTODESMIDÆ

XERODESMUS Chamberlin, new genus

Body composed of head and 20 segments. Last tergite reduced, largely covered by the penult. Collum, as in *Cynedesmus*, with 10 marginal lobes. Carinæ laterally trilobed excepting XVI, XVII and XVIII, which are four-lobed. Pore bearing process developed from median lobe; present on segments V, VII, IX, X, XII, XIII, and XV. Dorsum strongly tuberculate, with four longitudinal series of larger tubercles, there being ordinarily three tubercles on each tergite in each of the series.

Genotype, *X. mulegensis* Chamberlin, new species.

Differs from *Cynedesmus* in having the keels laterally trilobed instead of bilobed, in the position of the pore processes, the absence of pores from the sixteenth segment, and in the form of the last tergite. The pore-formula is the same as in *Psochodesmus*, based on a Floridan species; but this genus presumably has the lobation of the keels and the position of pore-processes as in *Cynedesmus*.

14. *Xerodesmus mulegensis* Chamberlin, new species

Dorsum light brown, the venter yellow. Vertex of head darker than its other regions. Vertigial sulcus of head distinct. Vertex granular. Antennæ distally as shown in fig. 36. Collum not wholly covering head from above; marginal rim rather narrow, not granular, crossed by radial grooves extending to the marginal notches; elevated portion of plate covered with well-marked tubercles (fig. 36). Other tergites densely tubercular, with the four rows of larger tubercles well marked. The pore-bodies in the form of rather large truncate cones replacing the middle lobe as present on the non-poriferous keels; the cones projecting beyond the other lobes, the caudal of which is reduced on the pore-bearing segments. A large lobe at base on caudal margin of keels. Caudal tubercles on posterior tergites projecting caudad from margin. Penult tergite with caudal tubercles of the two median series projecting as two large lobes over the caudal tergite. The latter with caudal margin straight and showing four minute lobes or crenuli and one tubercle on each lateral margin. (Cf. figs. 36, 37, and 38.) Length, 4.5 mm.

Several specimens were taken under stones on the bank of a reservoir and of Santa Rosalia river, no adult male being among them.

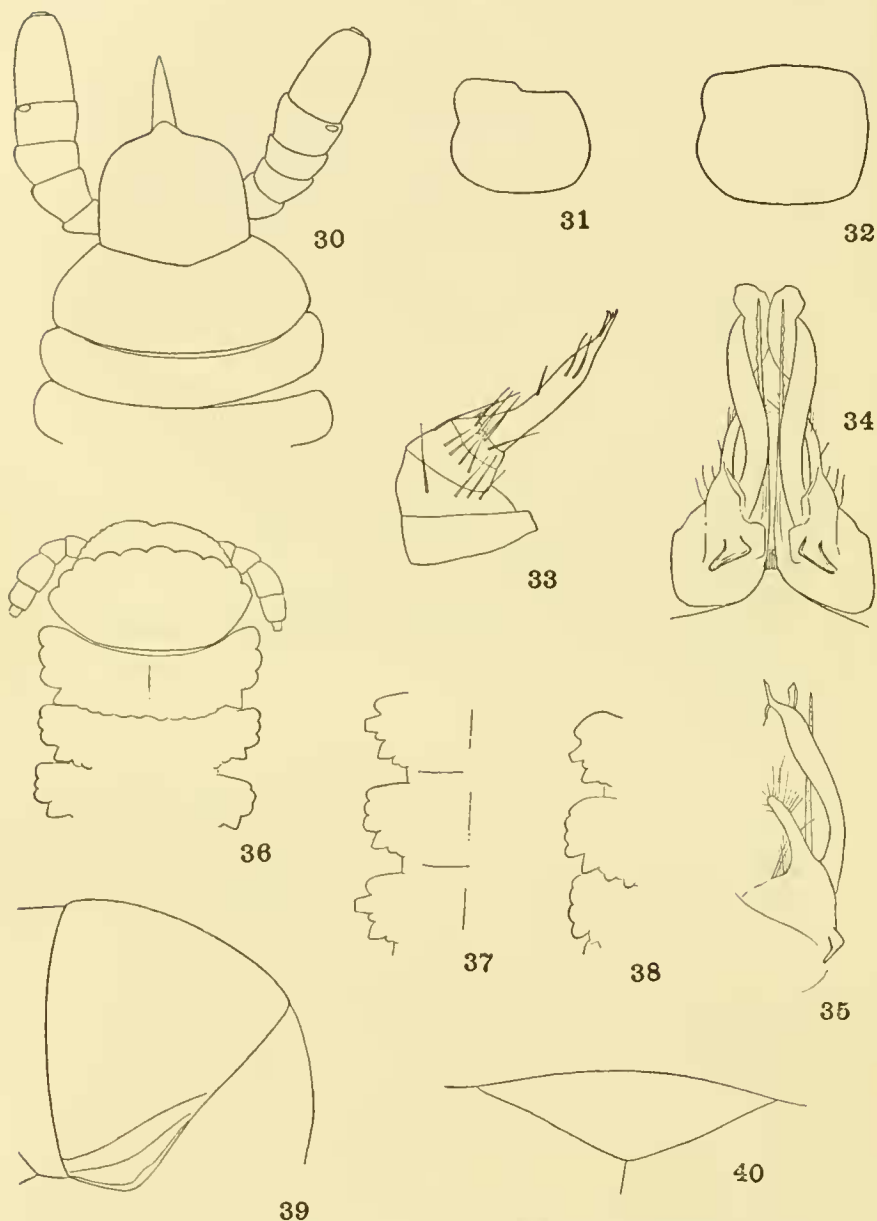


Fig. 30. Anterior end, dorsal view, of *Siphonophora pseustes*, sp. nov., x 46; 31. Pleurite of fifth segment of same, x 46; 32. Pleurite of posterior region of same, x 46; 33. Anterior gonopod of male, lateral view, of same, x 75; 34. Gonopods of male of *Lysiopetolum tiburonum*, sp. nov., x 46; 35. Gonopod of male, lateral view, of same, x 46; 36. Anterior end, dorsal view, in outline of *Xerodesmus mulegensis*, sp. nov., x 45; 37. Fifth, sixth and seventh keels, in outline, of same, x 45; 38. Fifteenth, sixteenth, and seventeenth keels, in outline, of same, x 45; 39. Collum, lateral view, of not fully mature male of *Orthoporus nesiotes*, sp. nov., x 15; 40. Anal scale of same, x 31.

Type: Female, No. 1260, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, May 14, 1921, at Mulegé, Lower California.

SPIROSTREPTIDÆ

15. *Orthoporus nesiotus* Chamberlin, new species

General color brown, darker behind suture of segments and especially adjacent to the narrow, light colored caudal border. Legs light ferruginous, the antennæ darker. Head smooth over vertigial and frontal regions; roughened in clypeal region with impressed punctæ and irregular striæ. Eyes about $1\frac{1}{4}$ their diameter apart. On each side the collum is margined below and up the anterior side to margin of head. Above the margining sulcus two oblique sulci. The form of lower end and position of sulci as shown in fig. 39. Pores beginning on sixth segment; at a little more than one-third the distance from suture to caudal edge. Segmental suture smooth, obtusely angled at level of pore. Segments dorsally smooth; striæ beginning a little below pore, the first ones short and weak, the lower ones complete and more sharply impressed. Last tergite much exceeded by the anal valves; caudal angle very obtuse, rounded; with numerous fine punctæ and a few fine coriarius markings, but otherwise smooth. Anal valves mesally compressed and elevated; punctate in manner of tergite. Anal sternite of form shown in fig. 40. Number of segments in the not fully mature male type, 61, of which the six preceding the anal segment are apodous. Length, about 50 mm.; width, 4 mm.; no mature males or females obtained.

In the male the copulatory organs are obvious but are very small, lacking one or more moults of maturity.

Type: Male, No. 1261, *allotype*, female, No. 1262, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, July 5, 1921, on south end of Tiburon Island.

16. *Orthoporus punctilliger* Chamberlin, new species

Color of segments varying considerably in detail. The covered portion of prozonite has typically an olivaceous cast, and the entire prozonite, or most of it, often light olive-testaceous, with posterior portion of segment brownish, a darker band in front of caudal margin, this band broader above and narrowing down the sides. Legs and antennæ dark brown. A dark band across vertex of head. Head mostly smooth, roughened in clypeal region with irregular furrows. Two submedian punctæ at level of antennæ. Eyes 1.4 times their length apart. In the male the collum extends below second tergite, the anterior corner moderately produced downward and forward, rounded. Sulci as shown in fig. 42. Collum of female differing as shown in fig. 43. Sutural impression of segments sharp, essentially smooth above, a little curved opposite pore, which is one-third the distance or less from suture to

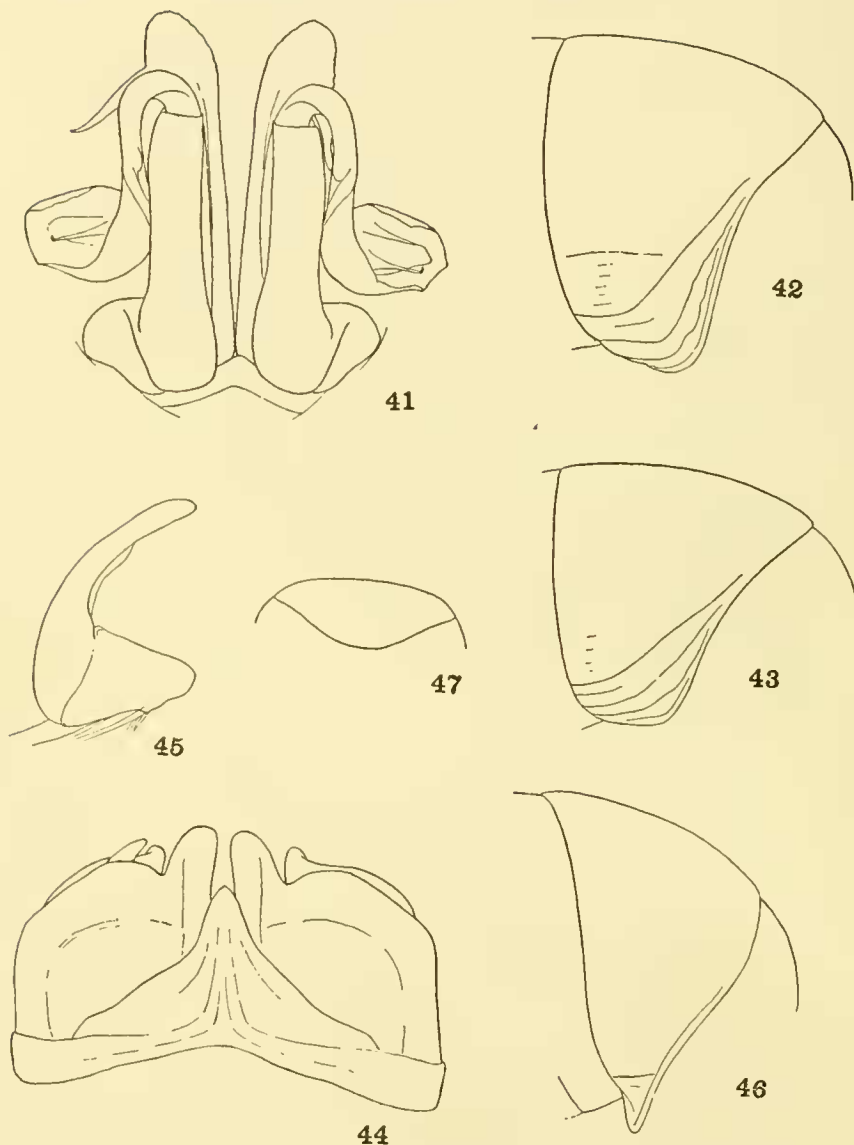


Fig. 41. Gonopods of male, anterior view, of *Orthoporus punctilliger*, sp. nov., x 14.5; 42. Collum of male, lateral view, of same, x 7; 43. Collum of female, lateral view, of same, x 7; 44. Gonopods of male, anterior view, of *Onychelus nigrescens* sp. nov. (the right posterior gonopod removed), x 30; 45. Right posterior gonopod of male of same, x 30; 46. Collum of male of same, lateral view, x 19.5; 47. Anal scale of male of same, x 19.5.

caudal margin. Surface of segments in general densely punctate and with some fine rugæ and impressed lines. Last tergite roughened with fine anastomosing rugæ, the rugæ coarser toward caudal end; punctæ fine. Surface of anal valves similar to that of last tergite. Gonopods of male as shown in fig. 41. Number of segments 67 or 68. Length, to about 120 mm.; width, to 8 mm.

Localities. Sonora: San Pedro Bay, (Ensenada Grande), five specimens July 7; San Carlos Bay, one specimen, July 7.

Distinguished at once from the preceding form in the densely punctate surface of the segments.

Type: Male, No. 1263, *allotype*, female, No. 1264, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, July 7, 1921, at **San Pedro Bay, Sonora, Mexico.**

ATOPETHOLIDÆ

17. *Onychelus nigrescens* Chamberlin, new species

Blackish, not distinctly annulate excepting by the usual narrow pale line along caudal edge. Sulcus of head complete but deeper over vertigial and clypeal region. Setigerous foveolæ in the type 4+5. Eyes very widely separated. Ocelli in seven or eight transverse series: 4, 6, 7, 8, 7, 6, 4, 1. Collum strongly narrowed down each side, the lower end slender, and, in the male at least, extending well below the level of the second tergite, the narrow produced end portion a little twisted so as to appear excavated on the caudal side. Anteriorly margined up to level of eye on each side. A deep longitudinal stria across base of produced lower end (fig. 46). Segments in general constricted, the furrow obvious below and up the sides but weaker across dorsum. Sutural impression absent or obscure. Pore lying at caudal edge of furrow. Last tergite a little exceeded by the valves; strongly rounded caudally; caudal portion set off by a weak sulcus behind which coriarius markings are stronger than in front. Valves meeting mesally in the usually reëntrant angle, the borders crossed by a few sulci. Last sternite formed as shown in fig. 47. Gonopods of male as shown in figs. 44 and 45. Number of segments 44. Length, about 27 mm.; width, 3.2 mm.

Unfortunately, all the legs were lost from the specimens.

Type: Male, No. 1265, Mus. Calif. Acad. Sci., collected by Jos. C. Chamberlin, May 18, at **Coronados Island, Gulf of California.**